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THE ZOOLOGIST:

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OF

NATURAL HISTORY

AND

JOURNAL FOR RECORDING FACTS & ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, ANNELIDES,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

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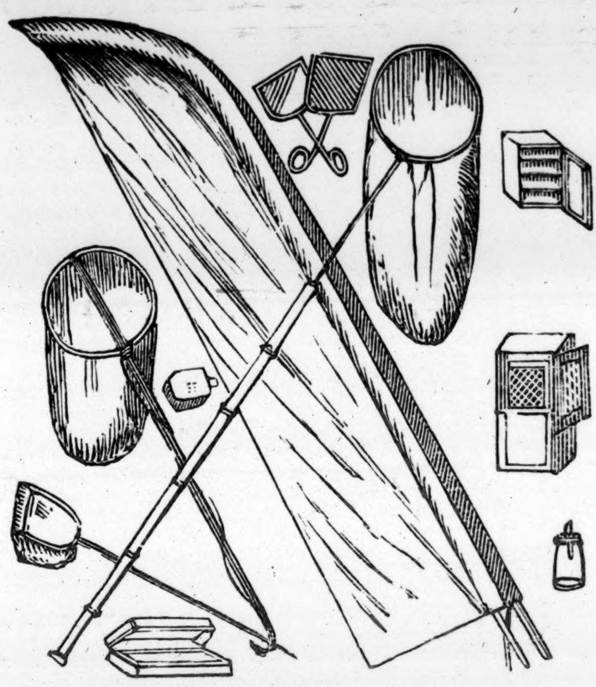

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COUNTY HISTORY OF HAMPSHIRE.

A GENTLEMAN, who is engaged in writing a COUNTY HISTO OF HAMPSHIRE, would be glad to receive any information respectin Zoology of that district. Lists of Animals, Birds, Reptiles, &c. &c., or lists of rarer species, would be very acceptable, especially if these could be connected with Climate and Geology of the County; as well as notices of casual visitors, remark varieties, and of any facts concerning their habits, food, destructiveness, &c., that possess both a local and a general interest. Local names, traditions and superstiti respecting any of the species would have a special value; and so would authentic counts of lost species, particularly if the causes of their extinction could be tra References to authentic sources of information on these points would be second in value to information at first hand. The Isle of Wight is, of course, to be co dered as a part of Hants in this inquiry.

As it is hoped that by the publication of this work the cause of science ma furthered, communications on any of the above subjects will, if desired, first ap in the pages of the 'Zoologist,' to the Editor of which journal they may be addres or to Mr. B. B. WOODWARD, St. John's Wood, London.

Proceedings of the Royal Physical Society of Edinburgh.

Saturday, January 8, 1853.—PROF. FLEMING, D.D., in the chair.

John Stewart, Esq., exhibited a collection of stereoscopic photographs, in illustration of which he made the following remarks:—

For some time past, Mr. S. said, he had endeavoured to ascertain by experiment the possibility of procuring a distinct representation of an object in motion, by means of very sensitive photographic plates. He meant by this a correct likeness of an object from an *instantaneous exposure* of a plate to its shadow while in motion. He was fully aware that part of what he proposed was of old date, and that photographic plates had years ago been rendered sensitive enough to require but an instant's exposure in order to procure a picture. Talbot proved this when he caught the distinct image of a revolving wheel illuminated by a spark of electricity; and an amateur photographer, Professor Machonochie, told him, that while taking a view of the inauguration of the Wellington statue in this city, he accidentally caught the distinct representation of a flash of lightning that occurred, as many present will recollect, during the ceremony, and which chanced at the instant he exposed his plate. He had not yet had the pleasure of seeing this photograph, but the Professor had kindly promised that he should soon do so. However, in both these cases the rapidity of taking these views was thrown *from* the operator *on to the illuminating cause.* Talbot's wheel was seen but for a fraction of a second, and, if his plate was sufficiently sensitive, was sure to impress its outline thereon. So with his friend's flash of lightning, though there is a remarkable difference in the two cases, the last being taken in the broad glare of daylight. To obtain a view of a moving object in daylight, the case is different; the rapidity of action must then be thrown upon *the operator*, and the speed of the plate's exposure must exceed the quickness of the object's motion, in order to ensure a distinct outline. The summer before last he *caught* (for he could use no other word) distinct views of many objects in motion, such as people walking, carriages moving, and the waves of the sea. These were on single plates. What he wished to show the Society to-day were stereoscopic views of the sea taken last summer. It will appear at once to every one who understands the stereoscope, that two views are required for this object. These two views must both be taken *instantaneously* from *nature*, and also *at the same instant.* They must be taken instantaneously, to procure a distinct outline from nature, in order that they may stand out in the instrument (which copies from a picture will not do), and at the same instant, to ensure their uniting together. Those he had on the table were so taken, and were views across Morecambe Bay, in North Lancashire. The waves and ripple on the sea have a distinct outline, the hill of Blackcombe on the opposite side is fourteen miles distant, and light clouds may be distinguished hanging half way across the bay. The process of preparing these plates Mr. Stewart at present declined to communicate, as it was intimately connected with some researches he was making to test the possibility of procuring natural colours along with a photographic view. He did not at present think it impossible that a process may be discovered by which nature may be represented in her own colours by means of the camera. Some traces of colour he had already been able to procure, but as yet not the faintest shade of that all-pervading one of green, which always comes out black in this style of photograph.

Hugh Miller, Esq., read a communication "On Bothrodendron, Ulodendron, Stigmaria, and other characteristic Plants of the Carboniferous Period; with a restoration

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of Sphenopteris elegans." The author began his paper by quoting from Mr. Bunbury's description of a fossil fern of the North American coal measures, published in the 'Journal of the Geological Society' for 1852. "It is rare," says Mr. B., "to find in the ferns of the carboniferous period, even the stipes or leaf-stalk completely preserved down to its base; the only specimen of the kind that I have seen is a beautiful Sphenopteris (I believe Sphenopteris elegans) from the Edinburgh coal-field, in the collection of Mr. Hugh Miller." What is deemed rare by Mr. Bunbury, one of our highest authorities in fossil Botany, must be regarded as absolutely so; and Mr. M. now exhibited, he said, and attempted to describe, this unique fossil, in the hope of adding a very little to what was already known regarding one of the most beautiful and characteristic ferns of the lower coal measures. From a suite of specimens on the Society's table, it would be found that, save in one particular, the entire frond of Sphenopteris elegans could be restored, so as to be rendered as palpable to conception as the fronds of the green brake, which in one respect it resembled, that flourished last season on the sunny hill-sides or amid the deep woodland glades of our country. In one important particular, however, the restoration must be incomplete. So far as Mr. M. knew, no specimen of any coal-measure species of this ancient genus exhibits the fructification; and we must be content, therefore, to acquaint ourselves simply with the general outline and venation of the plant. All previous attempted restorations of Sphenopteris had been unfortunate. It seems to have been inferred, from the minuteness of the pinnules, that the frond to which they belonged had also been minute; and so in the restorations,—such as that of the late Dr. Mantell, in his 'Wonders of Geology,' and that of the interesting oil painting of carboniferous plants in the Museum attached to the Edinburgh Botanic Garden,—restorations introduced, however, rather for pictorial than scientific purposes,—the large, eminently handsome, and apparently solitary frond given to the plant by Nature, has been represented by mere dwarfish pinnæ, rising gregariously, as in Polypodium and Asplenium, from a common rhizoma. In one important respect Sphenopteris elegans resembled Pteris aquilina,—our common hill-side bracken. It was furnished with a stout leafless rachis, exceedingly similar in form to that of Pteris. Nay, it exhibited so completely, in Mr. M.'s specimen, the same club-like slightly bent termination, the same gradual diminution in thickness, and the same smooth surface, that one accustomed to see this part of the bracken used as a thatch—and a very durable thatch the stipites of the bracken do form — can scarcely doubt that the stipes of Sphenopteris would have served the purpose equally well. Evidently, were it still in existence to be employed for that purpose, a roof thatched with Sphenopteris, with its pinnæ and leaflets concealed, and only its club-like stems exposed row above row, in the ordinary style of the fern-thatcher, could not be distinguished — so far as form and size went — from a roof thatched with Pteris. At a height of from seven to eight inches above its club-like termination, the stem divided into two equal parts, which shot upwards with a divergence that rendered the fork between an angle of about 30°; and at unequal heights, a little farther up, each of these divided stems bifurcated, in turn, at about the same angle, and then shot up, in some individuals, without further bifurcation; while in others they bifurcated again, and yet again. It is probable that, as in many of the recent ferns, the greater divisions of the plant were constant, while the smaller varied according to the richness of the soil, and the consequent size and degree of development attained by the frond. As in Pteris aquilina, there shot out from these main stems numerous pinnæ irregularly alternate, and which, becoming less compound as they approached the top of the plant, passed, in ascending, from tripinnate to bipinnate, and assumed finally the form of more alternately pinnate leaflets. Unlike Pteris, however, whose stem remains bare of pinnæ until its larger divisions take place, the stem of Sphenopteris elegans sent forth on its opposite sides two decompound pinnæ, the one about an inch, the other about an inch and a quarter or so, below the first fork, — a peculiarity of structure that must have imparted a graceful fulness of outline to the lower portion of the frond, which, had the rachis been bare, it could not have possessed. Alternation, save in the bifurcations of the main, secondary, and tertiary stems, and in the case of a few irregular pinnæ that seem to have been placed opposite, or nearly so, constituted the law that regulated the form of the plant. The pinnæ alternated on the greater stems, — the semi-pinnæ alternated on the pinnæ, — and finally, the minute, closely nerved, spathulate leaflets alternated on the semi-pinnæ. The entire frond must have been of great lightness and beauty, of a style intermediate, from the slimness of its leaflets and the slenderness of its secondary and tertiary stems, between that of the frond of Pteris aquilina, and that of the fully developed sucker of the graceful Asparagus. A hill-side clothed with these delicately fronded ferns must have rolled its mimic waves of soft green to every light breeze that stirred the depths of the old carboniferous forests; and the light and flexile covering which it gave to undulating plain or gentle acclivity, must have contrasted not unpleasingly with the columnar trunks of fluted Sigillariæ or scaly Lepidodendra, or with the huge rectilinear boles of gigantic Araucarians. After several remarks on the numerous so-called species of Sphenopteris found at Burdiehouse, most of which Mr. M. regarded as but mere varieties of a single species, he went on to state that he had an opportunity of seeing, about six years before, though but for an instant, the larger portion of a frond of Neuropteris gigantea. He laid it open at a pit-mouth near Musselburgh, in a mass of gray shale, sorely split and weathered; but he could do little more than determine that, like Sphenopteris elegans, and the common bracken, it too had a thick bare rachis, and that its pinnæ, like its leaflets, were alternate in their arrangement, when it fell to pieces in his hands. Mr. Miller regretted that, during the glimpse which he enjoyed of this beautiful frond, he failed to remark the order in which the larger divisions of the rachis took place; he merely saw, from the general effect, that the frond as a whole—balanced on its strong club-formed leaf-stem—was greatly massier than that of either Pteris aquilina or Sphenopteris elegans; and that in the clustered richness of its leaflets, although not in their disposition, it resembled our recent Osmunda regalis, or royal fern. So transient was his glimpse of the plant, that it has since reminded him of those momentary glances caught, according to tradition, of long-buried monarchs in their sepulchres, that in one moment are seen august in all their robes, and in the next descending before the admitted air into a shower of light dust. Mr. Miller next exhibited and described a very fine, and in some respects unique specimen of Ulodendron minus, which he had disinterred from out a bed of ferruginous shale in the Water of Leith, a little above the village of Colinton. Though little more than 10 inches in length by 3 in breadth, it exhibited no fewer than seven of those round beautifully sculptured scars, ranged rectilinearly along the trunk or stem, by which this ancient genus is so remarkably characterized. The specimen is covered with small, sharply relieved, obovate scales, most of them furnished with an apparent mid-rib, and with their edges slightly turned up; and from these peculiarities, and their great beauty, are suited to remind the architect of that style of sculpture adopted by Palladio from his master, Vitruvius, when, in ornamenting the Corinthian or composite torus, he fretted it into closely imbricated obovate leaves. These scales are ranged in elegant curves, which one of the members of the Royal Physical Society, Mr. Charles Peach, as his quick eye caught the arrangement in Mr. M.'s specimen, compared not inaptly to those ornamental curves—a a feat of the turning-lathe — which one sees roughening the backs of ladies' watches. Mr. Miller's specimen exhibited, as it lay in the rock, what, so far as he knew, no other specimen of Ulodendron had yet shown,—a true branch shooting out at an acute angle from the stem, and fretted with scales of a peculiar form, verging from irregularly rhomboidal to irregularly polygonal. It has been shown by Messrs. Lindley and Hutton, on the evidence of one of their specimens, figured in the 'Fossil Flora,' that the line of circular or oval scars, so remarkable in this genus, and which are held to be the impressions made by a rectilinear range of cones, an almost sessile row existed in duplicate, occurring on two of the sides of the plant directly opposite. Its cones were thus ranged all in one plane. The branch struck off from one of the intermedial sides, at what in the transverse section would be at right angles with the cones; and though little can be founded on a single specimen, such, certainly, is the disposition of branch that seems best to consort with such a disposition of cone. It may be added, said Mr. M., that if all the branches were also ranged in one plane like the cones, such a disposition would not be quite without example in the vegetable kingdom, even as it now exists. "Our host," says the late Captain Basil Hall, in his brief description of the island of Java, "carried us to see a singular tree, called familiarly the 'traveller's friend,' — Urania being, I believe, its botanic name. We found it to differ from most other trees, in having all its branches in one plane, like the sticks of a fan or the feathers of a peacock's tail." Influenced, perhaps, by Captain Hall's description, and the figure of Urania given in his work, Mr. M. had been accustomed, he said, to think of Ulodendron—though his evidence on the subject was still far from ample — as a plant somewhat resembling in its contour the old Jewish candlestick, as sculptured on the arch of Titus. Mr. M. then went on to show that Ulodendron was not, as surmised by the authors of the 'Fossil Flora,' a mere form of Lepidodendron; though not improbably another of their genera, Bothrodendron, was a form of *it*. At least, Ulodendron, when decorticated, exactly resembles the latter plant, being mottled over with minute dottings quincuncially arranged, and presenting its rectilinear line of oval scars devoid of the ordinary sculpturings. After several remarks on Lepidostrobus variabilis, which, as shown by specimens on the table, could not be the cone of Ulodendron, as Messrs. Lindley and Hutton had surmised, but was unequivocally, as had been inferred by Adolphe Brongniart, that of Lepidodendron, Mr. M. went on to describe what he deemed a new species of Stigmaria, which he had found in Joppa quarry. In the specimen exhibited, the characteristic areolæ of the plant presented the ordinary aspect. Each, however, formed the centre of a sculptured star, consisting of from eighteen to twenty rays, or rather the centre of a sculptured flower of the composite order, resembling a garden daisy,—the minute petals being ranged in three concentric lines. Mr. M. then referred to the discovery by Mr. Binney of Manchester, that the Stigmariæ are the *roots* of Sigillariæ, or rather, said Mr. M., the discovery that they occupy the *place* of roots. From a specimen on the table, it would be seen that they terminated very differently from true roots, — ending as abruptly as any of the Cactus tribe, and with their bud-like areolæ thickly clustered at the extremities. After arguing the point at considerable length, Mr. M. went on to say that it might, he thought, be consistently held, that while the place and position of Stigmaria were, as shown by Mr. Binney, those of true roots, just as the place and position of the rhizoma of Pteris aquilina, or of Cryptogramma crispa, are those of true roots, it was, notwithstanding, not a true root, but merely a congeries of subterranean stems, that sent forth from the centre at which they converged, a thick subaërial trunk, richly sculptured, and covered with a foliage of which every trace has long since disappeared. There was but one other plant of the coal measures, said Mr. M., to which he would at present call the attention of the Society. It was evidently a fern, but presented at first sight more the appearance of a Cycadaceous frond than any other vegetable organism of the carboniferous age yet seen. From a mid-stem, about a line in thickness, there proceed at right angles, and in alternate order, a series of sessile lanceolate leaflets, rather more than two inches in length, by about an eighth of an inch in breadth, and about three lines apart. Each is furnished with a slender mid-rib; and, what seems a singular, though not entirely unique feature in a fern, the edges of each are densely hirsute, and bristle with thick, short hair. The venation is not distinctly preserved. In conclusion, Mr. M. took the liberty, he said, of urging on such of the members of the Society as possessed unique fossils of our carboniferous flora,—unique either from the circumstance of their being positively new, or of throwing new light on the forms or structure of plants already known in part,—the importance of exhibiting and describing them for the general benefit. The authors of both Fossil Floras and Fossil Faunas, however able or accomplished they may be, have often to found their genera and species, and to frame their restorations, when they attempt these, on very inadequate specimens. For, were they to pause in their labours until better ones turned up, they would find the longest life greatly too short for the completion of even a small portion of their task. Much of their work must of necessity be of a provisional character,—so much so, that there are few possessors of good collections who do not find themselves in circumstances to furnish both addenda and errata to our most valuable works on Palæontology. And it is only by the free communication of these addenda and errata that geologists will at length be enabled adequately to conceive of the bypast creations,—of, in especial, the faunas of the palæozoic and secondary periods,—and of that gorgeous flora of the carboniferous age, with some of whose organisms Mr. M. had been attempting to deal, and which seems to have been by far the most luxuriant and wonderful which our emphatically ancient earth ever saw.

The third was a "Notice of the Octopus octopodia," by John Stewart, Esq. Mr. Stewart referred to the description given in Fleming's 'British Animals,' p. 254; and stated that the specimen he exhibited was caught on a hook in the Bay of Luce, October 26, 1852. Its dimensions were as follow:—Length of body, about 3¾ inches; breadth, 2¾ inches; length of head, 1½ inch; breadth, 1¾ inch; length of arms, 9 inches; but the lowest arm on the left side was only 7 inches long. He had taken three specimens last year in Loch Ryan, and two in Morecambe Bay, North Lancashire. Mr. Stewart also stated that Mr. George Wilson, who had sent him this specimen, informed him that an albicore had been taken last year in a salmon bag net at Strathaven, which was 25 inches in length, 17 in girth, and weighed 10 lbs.

James C. Howden, Esq., M.D., then read a communication, entitled "Notes on Marine Zoology." Dr. Howden said that of the star-fishes which occur in the Firth of Forth, by far the most common on muddy bottoms between Inch Michry and Gullaneness, is the little Ophiura albida; below that point, again, Ophiura texturata is of frequent occurrence. Ophiocoma neglecta appears to have a wide range, living in pools, at low-water mark, under stones, and especially among Corallina officinalis; he had found it at Joppa rocks, Prestonpans, Crail, &c., and also in mud, in four or five fathoms, off Prestonpans. The two most curious of our British Ophiuridæ are Ophiocoma brachiata and O. filiformis (of Forbes); both of them are found in the Firth of Forth. The first appears to be rare; but Dr. H. has obtained several unquestionable specimens in the trawl from Largo Bay. Ophiocoma filiformis is certainly not rare in mud, in from three to twelve fathoms, between Musselburgh and Kirkaldy. Indeed, one can seldom dredge off Musselburgh, without meeting with rejected members of this species; but it is very apt to be overlooked, especially as the very curious character ascribed to the third row of spines by Professor Forbes, is seldom met with. All the spines of the spine-bearing Echinoderms that Dr. H. has had an opportunity of examining, are more or less sculptured, and there is a general tendency to be compressed, especially in the third row, on the arms of the Ophiocomæ. Their margins are thin and transparent in Ophiocoma rosula and O. filiformis, — the former bearing large teeth, which are produced forward at an acute angle to the axis of the spine; on the latter, the spines are generally more or less truncated, and finely serrated along their margin, and often terminate by two large teeth projecting laterally, so forming the resemblance to a pickaxe; but there are all degrees of variation between this form and an acute terminal spine, as in other Ophiocomæ. Ophiocoma bellis and rosula are both common, especially the latter, as littoral, laminarian, and coralline species. Dr. H. has a small and imperfect specimen, which does not agree well with any of the species of this genus described by Professor Forbes. The disk is covered with scales, as in O. neglecta, but these have a frosted appearance, quite unlike the smooth surface of that species. The spines on the rays, instead of being ovoid, as in that species, are somewhat pyramidal and acute at the apex. The most remarkable character, however, is the absence of the superior plate on the two first segments of each ray. Until more specimens are obtained, nothing definite can be said; but it is not improbable that it may turn out to be merely an immature specimen of one of the larger species. Asterias aurantiaca and Solaster endeca are both brought up in abundance by the trawl-boats from Largo Bay, and on the lines further down the Firth. Solaster papposa abounds everywhere, and in all depths of water. Rays of Luidia fragilissima are of common occurrence on the fishing-lines from the Mar-bank; and Dr. H. has also met with them in the trawl from Largo Bay. Uraster rubens, U. violacea, and Cribella oculata are common on our coasts. In dredging on muddy or sandy bottoms, one of the most common crustaceans met with in all parts of the Firth of Forth is Stenorhynchus phalangium. Inachus Dorsettensis is sometimes brought up on the lines of the deep-sea boats. Hyas araneus is frequently met with on sandy sea-beaches at low water, as at Musselburgh, in the salmon-stake nets, where it indulges its carnivorous propensities on the fish left dry by the tide. The common shore crab (*Carcinus Mænas*) and the edible crab (*Cancer pagurus*) are also very injurious to the salmon-fisher in this way. Dr. H. had seen trout and mackerel reduced to skeletons in a very short time; and grilse and salmon are often rendered unfit for market by an unseemly scar, the work of these marauders. The finest specimens of Hyas araneus obtained by Dr. H. are from the crab-pots at Prestonpans; some of these (males) measured a foot from the extremity of the third limb to that of the opposite one, and were of a bright flesh-colour. The edible crab is very particular as to the time and quality of his meals; he will seldom enter the crab-pots except over-night, and then only when the fish with which they are baited is fresh. On the other hand, the Hyas as invariably feeds during the day, and seems to prefer his food a little high. Had we the means of observing, it is highly probable that we should find marine as well as terrestrial animals respectively diurnal and nocturnal in their habits. Hyas coarctatus must be common between Gullaneness and Largo, judging from the hundreds that are brought up by the trawl; but it rarely occurs above this. Dr. H.'s observations coincide with those of Mr. Bell in regard to the disparity in size between the male and female; 6½ inches is not uncommon for the span of the male across the third pair of limbs, whereas the largest female met with by Dr. H. had only a span of 3½ inches at corresponding parts. Eurynome aspera is probably not uncommon on mud in five or seven fathoms off Prestonpans and Portseaton. It is very apt to be overlooked, as it is generally incrusted with minute Algæ and mud, and in that state resembles the young of Hyas araneus. Portumnus variegatus appears to be rare: Dr. H. found one small living specimen on the sands between Musselburgh and Prestonpans two years ago; and Lieutenant Thomas obtained two cast shells at Portseaton last October. Portumnus marmoreus is occasionally thrown on the beach at Portobello and Musselburgh. Portumnus pusillus is very plentiful in mud off Prestonpans. Portumnus depurator is common everywhere. Corystes cassivelanus is believed to be frequently cast ashore at Portobello after storms. Lithodes Maia is familiar to most of the fishermen engaged at the mouth of the Firth; but it is probably very local, and an occupant of deep water. Of the small Paguri, the most common and best-marked species is Pagurus Hyndmanii; it is at once distinguished from all the others by the length of the second joint of the inferior antennæ. Dr. H. found it common in from three to twelve fathoms, off Musselburgh and Prestonpans. Along with the preceding Pagurus lævis occurs, though sparingly. Besides these, Dr. H. has two mutilated specimens, which, however, are characteristic enough. The one appears to be Pagurus ulidianus, the other Pagurus Forbesii of Bell. Porcellana platycheles may be found, although not plentifully, under stones at low water, between Crail and Fife-ness; within a stone's cast, however, round the corner, in St. Andrew's Bay, it abounds in great numbers: it is also believed to be common on the Berwickshire coast. While Porcellana longicornis is very abundant in the upper part of the Firth, it is comparatively scarce where the former species occurs. Galathea squamifera is common under stones at low-water mark of spring tides, on rocky coasts, as at Prestonpans, Portseaton, and Crail. It is occasionally brought up by the dredge, but these specimens are much smaller and lighter in colour than the littoral ones. Galathea strigosa is obtained in deep water near the Bass, &c. Galathea nexa is frequently dredged in mud, in from three to twelve fathoms, between Seafield and Portseaton. Munida Rondeletii must be rare in the Firth of Forth; Dr. H. is aware of only one instance of its occurrence, namely, to Mr. R. Gray, at Dunbar. Nephrops Norvegicus is frequently brought up by the line-boats from deep water; also in the trawl from Largo Bay. Crangon vulgaris is common on all sandy beaches; it is the only species Dr. H. has yet met with. Hippolyte vulgaris is very common in pools at low water at Prestonpans, Portseaton, Crail, &c: the variation in colour in different specimens is remarkable, and generally agrees with the colour of the prevailing sea-weed in these pools. Sometimes it assumes the precise hue of Laminaria or Delesseria, at others it is dark green, or light green, or bright red, as the case may be; and the colour does not disappear at death, but remains for months after. In the crab-pots at Crail Dr. H. found several specimens of Hippolyte which apparently differ from any of the described British species. It bears some resemblance to Hippolyte Cranchii of Leach, but has the rostrum shorter, more depressed, and not bidentate at the apex, as in that species. The wrist of the second pair of limbs is composed of seven articulations instead of six: and the central plate of the tail is furnished with five pairs of teeth, instead of four, as in H. Cranchii. It seemed a common species at Crail, and Dr. H. had since seen a specimen in Dr. Fleming's collection, obtained many years ago by him in Orkney. Mysis Chameleon is common in pools at low water. Besides the common Talitra saltator and Gammarus lacustris, and also, perhaps, G. campylops? whose specific distinction, however, is by no means a good one, namely, that of having the eyes shaped like the letter S., Dr. H. mentioned one of the carinated Gammari, agreeing with G. Sabinii of Milne-Edwards. During the summer of 1851 he obtained many specimens of a small amphipodous crustacean from the genital cavities of Cyanea purpurea, which, on examination, he found to be the Hyperia Latreillii of Milne-Edwards, which is synonymous with the Gammarus Galba of Montagu, (Linn. Trans. xi.) The eyes are strikingly large, and of a bright green colour. Of the Isopods, the most common are Ligia oceanica, Idotea pelagica, I. tricuspidata, and I. linearis. Arcturus longicornis is brought up by the lines of the deep-sea boats. Corophium longicorne occurs in pools at low water at Musselburgh. The Caprellæ described by Dr. Johnston in his 'Illustrations of British Zoology,' in Loudon's Magazine for 1835, are, Caprella Phasma, C. acanthifera, C. Pennantii, and C. linearis. Milne-Edwards and Dr. Johnston, although giving the same synonyme, are evidently describing different species when they refer to C. acuminifera of Desmarest, which is adopted by Dr. Johnston as C. acanthifera. He describes and figures it with a spine on the head, and with the terminal segments of the body smooth. Milne-Edwards, again, gives his C. acuminifera a smooth head, but a tuberculated body. In a specimen found by Dr. H. at Crail, which corresponds in some respects with that species, the head has a small obtuse spine, and the last three segments of the body are much tuberculated. The inferior antennæ are strongly ciliated beneath. Another species met with by Dr. H., while dredging at Prestonpans, resembles in some respects C. Phasma; but, besides having a spine above the origin of each of the second pair of limbs, it has two larger ones placed side by side on the dorsal aspect of that segment. The hands of the second pair of limbs have three teeth on their under surface. Two specimens taken by Dr. H. last October had attached themselves by their posterior limbs to an Antennularia; on gently touching them they moved up and down rapidly, the articulation between the second and third segments acting as a hinge-joint. In conclusion, Dr. H. mentioned four species belonging to that curious family the Pycnogonidæ. The first and most common is Pycnogonum littorale, which is plentiful under stones at low water, and also often dredged in three to five fathoms. The next in frequency is Nymphon femorale, or hirtum of Fabricius, which is frequently met with on shelly ground, especially about Inch Michry. Nymphon gracile appears to be much scarcer than either of the preceding. On Corallina officinalis, in a pool at Joppa rocks, Dr. H. found a specimen apparently belonging to the genus Phoxichilidium. It differs from any of those described by Milne-Edwards or Mr. H. Goodsir in the 'Edinburgh Philosophical Journal;' its colour was exactly that of the coralline.

Dr. John Alex. Smith next exhibited a specimen of a duck which was shot in December, 1851, near the Bass Rock, by some boatmen, who, from its unusual appearance, brought it to one of the Edinburgh bird-stuffers. Dr. Smith said he had been puzzled to find out what it was; but by the kind assistance of one of our celebrated ornithologists, he learned that it was a West Indian species,—the Bahama duck,—the Anas Bahamensis of Catesby's 'Carolina,' the Anas urophasianus of Vigors ('Zoological Journal,' iv. 337), the Dafila urophasianus of Eyton's 'Duck Tribe,' and the

Urophasianus Vigorsii of Beechey's Voyage, &c.; the inference being that it had probably escaped from confinement. Dr. Smith said there were no individuals of this species in the Zoological Gardens here, or amongst the collection at Gosford House; and, indeed, he was quite unable to learn of any being kept in confinement, either immediately to the south or north of the Firth of Forth. He was informed that three living specimens are at present in the collection of the Zoological Gardens, Regent's Park, London. The colour of the bird, Dr. Smith observed, was dark and light reddish brown, spotted with dark brown; the lower parts of the head and upper parts of the neck in front pure white; speculum green, glossed with purple and edged with black and light reddish fawn; the tail light drab, without spots, rather elongated, shaped somewhat like a pheasant's—whence the name; and there was a striking patch of yellow on each side of the dusky bill.

Proceedings of Natural-History Collectors in Foreign Countries.

Mr. H. W. Bates.* — "Santarem, October 18, 1852. — I returned from my Tapajos journey last week. A letter I wrote you on the 1st of August from Aveyros (Zool. 3801) would give you some account of my ascent of the river to that place, and my plans for exploring the branch river Cuparé. I left Aveyros on the 2nd of August, and entered the Cuparé on the following day; in this river I remained until the 13th of September: thence I crossed over to the west bank of the Tapajos, and worked at several points till the 21st, when I commenced my slow journey down the river. Altogether it has been the most laborious excursion I have made. I had to contend with almost every kind of difficulty and privation, even with actual hunger, from the difficulty of procuring subsistence, and, towards the last, ill health. The two Indians I obtained with great difficulty of the Commandant of Aveyros, gave me constant trouble and anxiety, — two lazy insolent young lads, who at last, when I wished to ascend the river to Curé, refused to accompany me any further. The voyage down the river to Santarem was very difficult and perilous, in fact I do not know how to describe it, so as to give you an adequate idea of what it is necessary to undergo. At all seasons the passage is difficult, but at the present time, the dry season, is the worst. The distance from Aveyros to Santarem is about 100 miles, and the breadth of the river varies from 5 to 8 miles. The coast is studded with rocky points, between which stretch wide shoally bays; in some places these shoals reach nearly half way across the river; in others, there are isolated sand-banks, especially off the rocky points. There is no current or tide to aid in descending the river, and to complete the difficulty, the trade-winds blow furiously upward from the Amazons all day, and often at night. The slightest wind is sufficient to obstruct all progress by oar, but the wind generally blew a gale, and sometimes a regular hurricane. Three times we were near being wrecked. The time for travelling is at night, when sometimes a gentle land-breeze from the eastern shore assists, but this is apt, towards midnight, to veer too much towards the North. When this was the case, or when there was no wind at all, we got along by poleing; the vessel went very well in one fathom of water, which was generally the depth about half a mile from the shore, and thus we were at last enabled to reach Santarem in safety. In travelling at night, it was necessary to calculate well the voyage from one harbour (of which there are several along the coast, called by the inhabitants *esperas*, or waiting-places) to another. However, I am glad to have to tell you that I am safe again in a civilized town, with all my collections landed in good condition.

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* Communicated by Mr. S. Stevens.

"The river Cuparé proved an excellent locality. The banks of the Tapajos are too dry and sandy, and the forest too sparse for any great abundance of insects; but the district of the Cuparé proved to be a deep and wide valley, between the dry hilly country, the soil clayey, and the forest very luxuriant. I reached the country of the savage Indians, passing the last half-civilized village (called Maloca) of the Mundurucús, and must have been near the sources of the Xingá. I was sorry to find no great amount of novelty among the Diurnes, *i. e.*, groups of new species of conspicuous things, which we may say make a great change in the fauna of a country, as was the case in passing up the Amazons to Ega. But the number of new species, one or two of a genus of those genera frequent at Pará, &c., will be great, and I have no doubt will much please our friends. In the genus Papilio I found nothing new, and the usual species very rare; this was the case generally in the Nymphalidæ, but I have plenty of species new to me in Pieris, Leptalis, Heliconia, Ithomia, Eurygona and allied genera, Nymphidium, Calospilus, Satyridæ, Theclæ and Hesperiadæ. A few Ega species occurred, such as Papilio Pausanias, Timetes Themistocles, and Margarea, two species of Cybdelis and one Arisba, but only one or two individuals of each. There is a small but I think very good collection of Coleoptera and other orders. I also paid much attention to the fishes; most of them were very curious and new to me. Of the small kinds I preserved two or three specimens of all the species I could get, perhaps forty species; of the larger species I could not get specimens, for such was our paucity of provisions, and the insufficiency of our means to take plenty of fish, that there were never any to spare, and it would have been running the risk of mutiny to abstract a specimen for my pickle-jars from my hungry people.

"I made a great effort to get specimens of the hyacinthine macaw, and engaged two hunters for some ten or twelve days. They ascended amongst the cataracts in a small boat, and I thus obtained six tolerable skins; although the price given by ornithologists in London, will never repay the extra expense and trouble they occasioned me.

"I am sorry I cannot get any part of the things ready to send by this vessel. I arrived here quite exhausted, suffering under a bilious attack, and quite incapable of doing anything; but now, thanks to a course of calomel, rest, and wholesome food, am a little better.

"H. W. BATES."

Occurrence of the Otter in various Localities.—In the 'Nottingham Journal' for the 25th of February, 1853, it is stated that "An otter of about 30 lbs. weight was shot at Barrow-on-Soar, Leicestershire, on Saturday last." There has also been one seen about Colwick Hall, Nottingham, this winter. A few years ago an otter was shot at Beeston Weir, by the present Sir Robert Clifton, who saw it come out of the water as he was lying in wait for ducks in the dusk of the evening. Traces of otters are still occasionally seen on the river Derwent, between Matlock and Derby; but the animals must be in extremely small numbers. An otter was caught in a landing-net some months ago in the Thames, a short distance below Windsor Bridge. There are still a few of them in the slow-running feeders of the the Thames in Berkshire.—*Edward Wolley; Beeston, February* 25, 1853.

Additions to the List of Birds of Orkney and Zetland.—In addition to our list of birds printed in 1848, besides the occurrence of several rare species, we have to add the following, as novelties:—Tengmalm's owl, (*Noctua Tengmalmi*); the common whitethroat, (*Curruca cinerea*); Bohemian waxwing, (*Bombycilla garrula*); and spotted redshank, (*Totanus fuscus*).—*Wm. Balfour Baikie, M.D.; Haslar Hospital, March* 2, 1853.

Occurrence of the Collared Pratincole (Glareola torquata) *in Wiltshire.*—I have great pleasure in recording the occurrence of that rare visitor to this country, the collared pratincole, which pleasure is considerably enhanced by the circumstance of its being shot in my own county, and of its finding its way into my collection, through the kindness of the gentleman who killed it. It appears that in the middle of November last, when Mr. Hussey, a farmer, of Tilshead, was walking over his land, the day being very rough and cold, the wind blowing from the East, he saw a strange bird descend near him with the velocity of lightning, and settle inside a sheep-fold among the sheep.

As Mr. Hussey chanced very fortunately to be an observer of birds, he immediately remarked that this was one he had never seen before, and pointed it out to his shepherd, who was with him, desiring him to watch the bird well while he returned to his home, at the distance of a mile, for his gun. Before he went, however, he saw the bird suddenly rise from the ground, and after a short flight of the most marvellous velocity, return again to the fold, where it seemed to enjoy the shelter from the bleak East wind, and to care nothing for the presence of the sheep, the men, and the dogs. This short excursionary flight was renewed several times, which made Mr. Hussey hesitate whether he should take the trouble to return home on so remote a chance of still finding on his return so singularly restless and swift a bird; however, as the bird always came back to the same spot after each successive excursion, Mr. Hussey hesitated no longer, but hurried home for his gun, giving strict charge to the shepherd to keep quiet, and on no account to lose sight of the bird. Now the shepherds of Salisbury Plain (in the midst of the bleakest part of which the parish of Tilshead lies) are not remarkable for their sharpness, indeed, I fear we must own them to be the perfection of all that is dull, heavy, and ignorant; no wonder, then, that a bird so very rapid in its movements as the collared pratincole should soon elude the slow gaze of the heavy-eyed Argus, and that on Mr. Hussey's return, in answer to his inquiries as to the whereabouts of the strange bird, he should be met with the provoking reply,—"Doant knaw, zur, he flee'd away so terrible sudden that I could'n zee 'en nowhere, I could'n: I never zee sech a bird to flee." Upon this, it may be supposed that Mr. Hussey walked on somewhat disappointed, when, in a moment, at the distance of about 30 yards, up sprang the bird, and was darting off at a prodigious rate, but a well-aimed shot laid it dead on the ground. On picking it up, the long wings and forked tail caused Mr. Hussey and others to suppose it to belong to the swallow tribe, and the dull-eyed shepherd, seeing no brilliant hues in the dead bird, as if to excuse his slowness, exclaimed with a sneer of contempt, "Well, zur, 'taint much of a bird, arter all, I'm zure!" In addition to the above narrative, Mr. Hussey tells me that "the land on which I found the bird, was of a stiff clay soil. I shot it close to the sheep-fold, where there were sheep feeding off turnips; the bird appeared to be rather tame, but whether from exhaustion or nature I cannot tell." I have already remarked that Tilshead lies in the middle of Salisbury Plain, and a more bleak, exposed situation can scarcely be imagined. The village is long and straggling, and all around it are large tracts of open down, now in a great measure brought into cultivation, but formerly a vast expanse of unbroken turf. Here, it is well known, the great bustard had a stronghold, where he was chased with greyhounds, and afforded admirable sport to the Wiltshire squires of that day; and here may still be found many of the family Charadriadæ,—the golden plover, and the dotterel, as well as the commoner peewit; so that the situation is just such as seems fitted to the habits of the pratincole, and yet this is (I believe) the first instance known of the occurrence of that bird in Wiltshire. Seldom indeed does this singular bird appear to have visited our island; in addition to the few captures recorded in Yarrell's 'British Birds,' the last of which was in 1840, I believe it has but twice been observed, and both these occurrences were in the northern counties. It is singular, too, that while every record of the date of its capture has pointed to the summer as the time chosen for its visit (the months of May and August being the only ones on which it has been seen), the individual of which I am writing chose a cold raw day in the middle of November, to make its appearance during an East wind, on one of the most exposed parts of the bleak Wiltshire downs. I believe I have nothing more to add to this account, except that my bird scarcely deserves the name of "torquata," his collar being very indistinctly marked; the position of it however is clearly seen by the dark brown spots which almost encircle his pale fawn-coloured throat; hence I conclude, from Mr. Yarrell's description, that mine is a bird of the year.—*Alfred Charles Smith; Yatesbury Rectory, Calne, March* 7, 1853.

Occurrence of the Fire-crested Regulus (Regulus ignicapillus) *near Penzance.* — A day or two since another adult male specimen of the fire-crested Regulus was obtained from Lariggan Valley, near this town, the locality whence nerly all the examples I have reported to you have been obtained.—*Edward Hearle Rodd; Penzance, Feb.* 23, 1853.

The Apteryx in Britain. — As the Apteryx is confined to a very limited region on the opposite side of our planet, not aquatic in its habits, totally incapable of flight, and consequently one of the last birds likely to be met with in Britain; I think the readers of the 'Zoologist' would feel obliged to Mr. Spode, if he would favour them with a more detailed account of the occurrence of this bird, which, in his communication of January 28 (Zool. 3815), he merely states was shot on a marsh in Anglesea "some three or four years ago." It would be interesting to know as much of its habits as the person who shot it observed; at what time of the day, and at what season of the year it was obtained; what condition it was in; and what vessels (if any) were wrecked in the neighbourhood at the time. It is highly improbable that any one who would be at the trouble of bringing a bird so very difficult to cater for during a long voyage all the way from New Zealand, would, after all his pains, turn it adrift in North Wales; and in the event of a wreck, the Apteryx seems one of the last creatures likely to escape. Without some of these particulars, I fear it will prove as difficult for the readers of the 'Zoologist' to account for the presence of the Apteryx in Anglesea, as it would be for the physiologist to explain the growth of Mr. Pickard-Cambridge's spider (Zool. 3766) which, that gentleman tells us, increased to at least ten times its original bulk "without material sustenance."—*Edmund Browne; 10, Bedford St., Bedford Row, February* 22, 1853.

Catalogue of the Fishes of Orkney and Zetland.

By WILLIAM BALFOUR BAIKIE, Esq., M.D.

Order I.—PLAGIOSTOMI.

Sub-order 1.—*Raiinæ.*

Raiidæ.

Thorn-back, *Raia clavata.* Very abundant.
Sharp-nosed Skate, *Raia oxyrhynchus.* Not uncommon.
Skate, *Raia Batis.* Abundant.

Sub-order 2.—*Squalinæ.*

Squatinidæ.

Angel Fish, *Squatina Angelus.* Rare.

Scymnidæ.

Greenland Shark, *Scymnus borealis.* One specimen in Zetland.

Alopiidæ.

Fox Shark, *Alopias Vulpes.* Not common.

Lamnidæ.

Porbeagle, *Lamna Cornubica.* Not rare.
Basking Shark, *Selachus maximus.* Rare.

Squalidæ.

Blue Shark, *Carcharias glaucus.* Not unfrequent.
White Shark, *Carcharias vulgaris.* Doubtful; on Low's authority.

Galeidæ.

Smooth Hound, *Mustelus lævis.* Occasionally met with.

Scylliidæ.

Small-spotted Dog-fish, *Scyllium canicula.* Very common.
Large-spotted Dog-fish, *Scyllium catulus.* Rare.

Spinacidæ.

Piked Dog-fish, *Acanthias vulgaris.* Very abundant.

Order II.—HOLOCEPHALI.

Chimæridæ.

Northern Chimæra, *Chimæra monstrosa.* Hitherto obtained only in Zetland.

Order III.—GANOIDEI.

Sub-order.—*Chondrostei.*

Acipenseridæ.

Sturgeon, *Acipenser Sturio.* Mentioned on Low's authority; no specimen of late years.

Order IV.—LOPHOBRANCHII.

Syngnathidæ.

Great Pipe-fish, *Syngnathus acus.* Common.
Deep-nosed Pipe-fish, *Syngnathus Typhle.* Rare.

Æquoreal Pipe-fish, ***Syngnathus æquoreus.*** Not rare.

Snake Pipe-fish, ***Syngnathus anguineus.*** Not uncommon.

Worm Pipe-fish, ***Syngnathus lumbriciformis.*** Common.

Hippocampidæ.

Short-nosed Hippocampus, ***Hippocampus brevirostris.*** One dead specimen obtained.

Order V.—PLECTOGNATHI.

Gymnodontidæ.

Pennant's Globe-fish, ***Tetrodon Pennantii.*** Very rare. Two specimens have occurred in Orkney.

Short Sun-fish, ***Orthagoriscus mola.*** Has been obtained on two or three occasions.

Oblong Sun-fish, ***Orthagoriscus oblongus.*** One specimen obtained in Orkney.

Balistidæ.

European File-fish, ***Balistes capriscus.*** One specimen obtained in North Ronaldsey, about 1827 or 1828, is at present in the possession of William Traill, Esq., of Woodwick.

WM. BALFOUR BAIKIE.

Haslar Hospital, Gosport, March 2, 1853.

(To be continued.)

Occurrence of Herrings in the Lakes of Killarney.— At a meeting of the Dublin Natural History Society on the 11th of January, 1853, Mr. Ffennell, Inspecting Commissioner of Fisheries, said that in one of his tours of duty, when inspecting the salmon-fisheries in the neighbourhood of Killarney, he was much surprised to find taken in the salmon-nets what he at the time considered to be the pollan. He had, at a meeting of the Society last session, mentioned several widely situated localities where pollan had been met with in this country, and he was therefore pleased at being able to trace their existence still further. This was in the month of May last. The matter escaped his further attention, until Mr. Mulvanny, Commissioner, accidentally saw the specimens that he (Mr. Ffennell) had obtained and preserved in spirits, and at once pronounced them to be the true herring, identical with those taken on this coast, noticing at the same time the absence of the fatty dorsal fin which characterized the pollan and the trout species. A fact so interesting led Mr. Ffennell to make more full inquiries, and he found that the herring abounded at seasons in the lakes at Killarney, and that they could be taken in numbers. Although very frequently taken in the salmon-nets, the fishermen, by whom whom they were known as and called "goureens," did not seek them. The specimens exhibited by Mr. Ffennell were taken in the Lower Lake of Killarney, fourteen miles from the head of the tide-way. According to the seasons, if the fishermen used proper means of capture, he thought that herrings might be taken there in abundance. Mr. Andrews remarked that he could not but receive with astonishment such a statement. He was aware that many singular habits of fish had been noticed; the mullet and the cod-fish have been recorded as living in fresh water, and the finest soles have been taken in the Arun river, miles above the tide-way, and where they breed and remain throughout the year. Nilsson states instances of the salmon remaining permanently in fresh water, for it is known that it winters in the interior Swedish lakes, Wenern and Silgern, from whence it ascends the rivers at the close of the spring, without entering the salt water at all. Could the Clupea harenga be proved to be in such numbers in Killarney, it would be of vast importance to that district. Jolters brought them from the coast to Killarney and other inland places. Too frequently the uncertainty of taking herrings, and the storminess of the weather, made them scarce and dear. Mr. Andrews was aware that the Alosa had been met with in the rivers in Kerry, but it was difficult, in the young state, to detect well the differences between A. communis and A. finta. They were frequent in some of the rivers in England, and abundant in the northern lakes and rivers of Europe. Alosa finta spawned in fresh water in May.—*From the Report in 'Saunders's News-Letter,' February* 18, 1853.

Occurrence of Pennant's Globe-fish (Tetrodon Pennantii) *near Ardmore, Co. Waterford.*—My communication [to the Dublin Natural History Society] dated Ardmore, Co. Waterford, Sept. 28, 1852, was to the following purport. I am anxious to place on record the occurrence of Tetrodon Pennantii, a fine specimen of which was washed ashore here on Sunday, the 26th instant, after a smart North-easterly gale. It was dead when found. This makes the third specimen which has been taken on the Irish coast, and it differs from Pennant's description, both in the colour of its spines, and in the fact of its having a double row of dark spots extending from the snout, backwards over the eyes, and ending by curving downwards in front of the branchial openings. These spots, when the skin dried, became elevated and rough to the touch. The admeasurements of this fish were as follow:—From the mouth to the extremity of the caudal fin, 21 inches: from the commencement of the spines beneath the lower jaw to the vent, 13 inches: circumference round the moderately dilated pouch, 33 inches. The fin-notation was:—Caudal, 7: dorsal, 12: anal, 12: pectoral, 14. The colour of the fish was a most brilliant ultra-marine blue on the back; the belly silvery; pouch gray, covered with *white* spines, each arising from four roots; the spines extended from beneath the lower jaw to the vent. The irides were gray, with white spots. In other respects the fish agreed with Mr. Yarrell's description. After it was preserved, the colours faded considerably, especially that on the back.—*Edward H. Sargint; 19, Bolton Street, Dublin, February* 18, 1853.

Note on Frogs and Toads inclosed in Stones.—During the summer of 1846, in the formation of a railroad, about half a mile from Pontefract, in Yorkshire, the works were carried a "depth of four feet through a rock betwixt lime and sandstone, about the junction of the two formations;" the rock being so firm as to require blasting. "It is entirely free from beds of any kind, or what the workmen term 'backs' running up it," but therein are "an infinite number of small nodules of a harder quality, entirely crystallized in the interior." After blasting, the labourers were much surprised to find among the fragments several of these nodules, each one containing a frog, as many as seven having been counted after one "shot." These were not casually seen when exposed, and then disregarded, but were examined in their stone prisons through very minute holes, some even preserved in that state for a long period. For example, the relator states of one specimen, "I kept this toad in a cellar for about five months, during which time it ate nothing, and was without light, the hole in the stone being covered with a piece of clay, and the whole kept moist and cool with water." Of another he says, "The frog lived only about a week, as I kept it in a place which I think was too warm for it, and also not sufficiently dark and quiet. When the frogs were disturbed by the shots, their first desire seemed to be to get under shelter of some stone, or into their old holes again, showing thereby that sight was not wanting, and bodily activity was perfect as far as could be seen. One thing struck me as singular with regard to the frog I kept, its fresh, plump, and healthy appearance, its skin being soft and transparent. One day when I was holding my finger over the hole in the stone, it pushed its head between my finger and the sides of the hole, and drew its whole body after it on to the table, where it appeared more like a skeleton than any living animal I have ever seen, but by degrees it extended itself to its former dimensions." Of the above curious occurrence my only knowledge is derived from the account, written to a distant friend, of which the substance has now been extracted. The writer is an utter stranger, but he was officially employed in the operations which resulted in the discoveries, and my information leads me to believe his report deserving of confidence, for which reason I have not hesitated to offer this abstract for publication in the 'Zoologist.' Since the above narrative was submitted to my perusal, and before I received permission to make this communication, I have read Mr. Plant's notice (Zool. 3808) repudiating the credibility of "these marvellous relations." Without expressing an opinion whether or not the Chesterfield quarry-men he mentions desired to impose upon him, it may be suggested, that the failing to meet with *a confessedly great rarity* within a given (and comparatively short) space of time, no more proves the non-existence of that rarity, than the innocence of a culprit was established by his asserting, when sundry witnesses affirmed they saw him commit the offence he was accused of, that he could produce ten times the number, who would swear they *did not* see him. —*Arthur Hussey; Rottingdean, March* 15, 1853.

[Having ever warmly advocated inquiries of this kind, and strenuously opposed all attempts to quash such inquiries by the statement that the phenomena were contrary to what *ought* to be the proceeding of Nature; I am bound, not merely by courtesy and fairness, but by consistency, to give every encouragement to the expression of opinion on this and every other moot question, and shall be very glad to receive and publish any communication on the subject: at the same time I must beg correspondents to make their communications as precise as possible. In almost every statement I have yet seen on this subject, there is an absence of that exactitude which ought always to accompany records of phenomena that are liable to be controverted. — *Edward Newman.*]

Note on Large Snakes. — Seeing in your last number (Zool. 3809) a note from Mr. Pickard-Cambridge, giving the dimensions of a snake's skin, 4 feet 2 inches long, which he recorded for its large size, I beg to state that in two instances snakes exceeding 4 feet in length have come under my observation: both occurred here. The first was captured by my brother, a few years ago, to add to a collection of live snakes which we kept in a cask and tried to tame. This specimen exceeded 4 feet in length by an inch or two, but I cannot distinctly remember by how many inches. On being caught, it struck my brother's hand, and inflicted a wound which bled freely. This is the only case in which I have seen the bite of the common snake bring blood; and this snake, though we tried him, never struck again with the same force. The second instance of a large snake was a recently killed one, which I found the year before last while out butterfly-catching. This snake, from its size, I was induced to measure on the handle of my butterfly-net, and found that it must have been about 4 feet 1 inch long. Doubtless snakes of this large size are of very rare occurrence. The largest viper I remember to have measured was exactly 2 feet 1 inch in length. — *William Henry Hawker; Ashford Lodge, near Petersfield, Hants, March* 15, 1853.

NOTICES OF NEW BOOKS.

'*A Naturalist's Sojourn in Jamaica.*' By PHILIP HENRY GOSSE, A.L.S., &c.; assisted by RICHARD HILL, Esq. London: Longmans. 1853.

"NATURAL HISTORY is far too much a science of dead things; a *necrology*. It is mainly conversant with dry skins furred or feathered, blackened, shrivelled, and hay-stuffed; with objects, some admirably beautiful, some hideously ugly, impaled on pins, and arranged in rows in cork drawers; with uncouth forms, disgusting to sight and smell, bleached and shrunken, suspended by threads and immersed in spirit (in defiance of the aphorism, that 'he who is born to be hanged will never be drowned') in glass bottles. These distorted things are described; their scales, plates, feathers counted; their forms copied, all shrivelled and stiffened as they are; their colours, changed and modified by death or partial decay, carefully set down; their limbs, members, and organs measured, and the results recorded in thousandths of an inch; two names are given to every one; the whole is enveloped in a mystic cloud of Græco-Latino-English phraseology (often barbaric enough),—and this is Natural History! Of the hundred thousand animals which are considered as 'known to naturalists,' it is probably much within the mark to assert that ninety thousand are 'known' only in such sort as is described above. What should we think if the world were to collect from Egypt the tens of thousands of mummies that are said to be entombed in the mighty catacombs of that country, and having placed them in museums should appoint learned men minutely to measure their differing features and limbs, to describe their appearance with exactitude, and to depict their portraits in all the leathery blackness of their physiognomy; then to give each a name and record the whole in a book, — what should we think if the world would call this Egyptian *History*?

"It is manifest that there is not an iota of *History* in either the one or the other. For History is the record of the actions of men, their relations to other men, the circumstances in which they acted, their characters, the influence of their lives upon society, their connexion with the times preceding and following their own, and other points of interest, not one of which could be gathered from a description of their dead and preserved bodies, though ever so exact and minute. So, that alone is worthy to be called *Natural History*, which investigates and records the condition of living things—of things in a state of nature; if animals, of *living* animals: — which tells of their 'sayings and doings,' their varied notes and utterances, songs and cries; their actions, in ease and under the pressure of circumstances; their affections and passions, towards their young, towards each other, towards other animals, towards man; their various arts and devices, to protect their progeny, to procure food, to escape from their enemies, to defend themselves from attack; their ingenious resources for concealment; their stratagems to overcome their victims; their modes of bringing forth, of feeding, and of training their offspring; the relations of their structure to their wants and habits; the countries in which they dwell; their connexion with the inanimate world around them, mountain or plain, forest or field, barren heath or bushy dell, open savanna or wild hidden glen, river, lake, or sea: — this would be indeed *Zoology*, *i.e.*, the science of *living* creatures. And if we have their portraits, let us have them drawn from the life, while the bright eyes are glancing, and the flexible features express the emotion of the mind within, and the hues, so often fleeting and evanescent, exist in their unchanged reality, and the attitudes are full of the elegance and grace that free, wild nature assumes."—*Preface*, p. v.

To these observations we most cordially say Amen! They are after our own heart; they advocate that very system of observation which we have ever advocated; they go far to hold up Natural History in a more attractive form than usual, — to place it in a better light than usual; they recall to our minds the labours of Gilbert White; they breathe the very essence of that spirit in which the idea of the 'Zoologist' was conceived, and in which it has been our unceasing wish to conduct it. Honour be to Mr. Gosse for his sentiments; and honour be to him for this promise of amending Natural History: honour be to him also for the manner in which his promise has been kept. His 'Naturalist's Sojourn in Jamaica' is a capital book; a book full of amusing instruction; a book which we cordially commend to every lover of Nature. Here are a few extracts from its truly pleasant pages.

Pelicans.—"Many little flat kays, as such islets are called, lay around, among which our tortuous course led us; scarcely more than the flat tops of coral rocks, almost level with the sea, on which sand and shells had been accumulated by the waves; yet pleasant to look on, because covered with low bushes of a refreshing greenness. On their snowy beaches, where the gentle ripple was sparkling, or perched on the irregular blocks of black rock, that lay half covered with the tide, sat many pelicans, preening their plumage, and dashing the water over their wings, or lazily resting after their morning's fishing excursion. Some sat sleepily on the sea, their forms reflected from its bosom, inert and motionless, except for the alternate rise and fall which were produced by the undulation of the ground swell."—p. 22.

The Painted Swift-foot.—"About the rocks in the vicinity of Black River, I noticed many specimens of this beautiful crab (*Grapsus tenuicrustatus*). Its form is remarkably flat, as are also the legs, and particularly the thighs, which pack one on the other in a very curious manner: the hue is a chaste warm gray, marked with transverse zigzag black lines, somewhat like writing. It is difficult to capture, for it is very wary, and its swiftness of foot is amazing: it darts from side to side over the rough surfaces of the rocks, with a rapidity that is much more like flying than running; not in a continuous course, but fitfully and irregularly, now shooting hither, now thither, and remaining still for momentary intervals between, watching for the intruder. What is remarkable is, that it does not matter whether the rock upon which it runs so swiftly be horizontal or perpendicular, nor whether its back or its belly be uppermost; it shoots round the projecting ledges, and darts about on their under sides, with as perfect security and ease as on the broad flat top of the rock. Does not this indicate a delicate sense of touch in the tips of its shelly feet?"—p. 34.

Pelicans and Man-of-war Birds.—"In the smooth water in-shore, that accurately reflected the outline of the land, long strings of pelicans were alternately plunging after their prey, and sailing on heavy flagging wing; and far, far overhead, like black specks against the bright sky, a flock of man-of-war birds were placidly floating; resting, if I may be allowed the term, in the lofty air, after their morning meal upon the flying-fish in the offing."—p. 36.

The Soldier Crab.—" Among the loose pebbles that formed the surface of this hill wherever the huge out-cropping masses of rock did not appear, and that added to the difficulties of penetrating the maze, were many large shells. The first of these that I saw was a large round brown snail (*Helix Jamaicensis*), and as its exterior was very fresh, I thought I had a prize ; but on taking it up, I saw the large claw of a hermit crab, red and tuberculous, closing up the orifice, which it exactly fitted. The negroes call these crabs soldiers, perhaps from their red hue. Afterwards I saw other specimens, and some of a large Trochus (*Meleagris picus*) with pearly interior, as well as a capacious Ampullaria, inhabited by the same species. It crawls irregularly, but quickly, making its shell rattle against the pebbles as it proceeds ; but if alarmed, it instantly withdraws into its house, and bringing its strong legs around its head in the form of a semicircle, claps its great claw upon the whole, presenting, as I have said above, nothing but a hard, shelly, prickly, convex surface, within the margin of the house, so accurately filling the aperture, and so strongly held down, that it is impossible to extract the animal alive without breaking the shell to fragments. Yet the wary soldier is ready for fight : while I was holding one in my hand, the rogue protruded his claw, and seizing the skin of my palm, fairly took the piece out.

" The species was the well-known Cœnobita Diogenes, and, as I afterwards found, abundantly common in the woods near the coast. I even found it numerous, inhabiting the shell of the same large Helix, far up on the side of the mountains, behind Blue-fields, in the driest and most rocky situations. Sir H. de la Beche found it inhabiting sea-shells, near the Rio Minho, ten miles from the sea. It is evident that the active little creatures must have crawled the whole distance, and as the Helix is found in a living state only in the woods, and as far as I know, only in the mountains, it follows that the soldiers must have travelled up the country in their sea-side shells, until they came to the region of the Helix, and there have changed their houses, and brought the latter down towards the sea on their return. Many of the Helix shells were so pearly in the interior, and so bright and fresh on the exterior, as to show that they could not have long lain exposed to the weather since tenanted by the original proprietor. This suggests the inquiry, whether in any case the Cœnobita destroys the snail to obtain his shell for a dwelling."—p. 44.

Long-tailed Humming-bird. — " While I was up in the calibash tree, engaged in detaching the bunches of Oncidium, the beautiful long-tailed humming-bird (*Trochilus polytmus*) came shooting by with its two long velvet-black feathers fluttering like streamers behind it, and began to suck at the blossoms of the tree in which I was. Quite regardless of my presence, consciously secure in its power of wing, the lovely little gem hovered around the trunk, and threaded the branches, now probing here, now there, its cloudy wings on each side vibrating with a noise like that of a spinning-wheel, and its emerald breast for a moment flashing brilliantly in the sun's ray; then apparently black, all the light being absorbed; then, as it slightly turned, becoming a dark olive; then in an instant blazing forth again with emerald effulgence. Several times it came close to me, as I sat motionless with delight, and holding my breath for fear of alarming it, and driving it away; it seemed almost worth a voyage across the sea to behold so radiant a creature in all the wildness of its native freedom."—p. 48.

Calling Crabs.—"A small stream running through a fœtid morass crosses the road about half a mile from Blue-fields, and has deposited a broad flat bank of mud at its mouth, which is uncovered at low water. At this time it is seen to be pierced with innumerable little holes; and hundreds of a tiny calling crab (*Gelasimus vocans*) are running over its surface, the males of which hold up their enormous claw in front, as if in defiance.

"At the approach of an intruder, every one hastens into his burrow, and in a moment the muddy bank, that was alive with the moving atoms, is perfectly still; except that a dull-coloured but agile beetle (*Cicindela Guadalupensis*) is flitting about and alighting upon it. The little crabs are very swift and wary, so that it is difficult to capture them, except by making a sudden rush from a distance among them." —p. 50.

Glow Flies.—"I will now speak of our other luminous insect, the glow-fly, (*Pyrophorus noctilucus*). From February to the middle of summer, this beetle is common in the low lands, and at moderate elevations. Lacordaire's account of the luminosity of this Elater (known to me, however, only by the citation in Kirby and Spence's 'Introduction to Entomology,' ii. 333, 6th edit.) differs so greatly from the phenomena presented by our Jamaica specimens, that I cannot help concluding that he has described an allied but very distinct species, and I feel justified therefore in recording what I have myself observed. The light from the two oval tubercles on the dorsal surface of the thorax is very visible even in broad daylight. When the insect is undisturbed, these spots are generally quite opaque, of a dull white hue, but, on being handled, they ignite, not suddenly, but gradually, the centre of each tubercle first showing a point of light, which in a moment spreads to the circumference, and increases in intensity until it blazes with a lustre almost dazzling. The colour of the thoracic light is a rich yellow-green. In a dark room, *pitch dark*, this insect gives so much illumination as to cast a definite shadow of any object on the opposite wall, and when held two inches from a book, the whole line may be read *without moving it.* The under part of the thorax has a singular appearance when the tubercles are fully lighted up, for the horny coat of skin being somewhat pellucid, displays the light within redly and dimly, as if the whole thorax were red hot, particularly at the edges, immediately beneath the tubercles. When left alone, the insect soon relapses into stillness, and the tubercles presently fade into darkness, either total, or redeemed only by a spark scarcely perceptible.

"I had been familiar with this glow-fly for some weeks, and had made the above observations on it, without being aware that it possessed any other source of light than the thoracic tubercles. I had indeed remarked that when flying at liberty the light which it diffused was of *a rich ruddy glow*, and yet these individual insects, if captured and held in the hand, showed only a *green* light. I much wondered at this, but knew not how to account for it, until a friend explained it, illustrating his remarks by experiment. On the *ventral surface*, when the abdomen is extended, there is seen between its first segment and the metathorax, an oval transverse space, covered with thin membrane, which glows with orange-coloured light, totally concealed, however, when the abdomen is relaxed, by the over-lapping of the metathorax. When the insect is placed on its back, it throws itself into the air like other Elaters; but if it be made to repeat this many times it appears to become weary, and endeavours to raise itself by bending the head and the abdomen back, so as to rest on the extremities, in hope to *roll* over. It is when thus recurved that the abdominal light suddenly appears, the oval space being uncovered. When held in the hand, the same effect is produced by forcibly bending back the abdomen with the fingers; but this is not very easy of accomplishment, on account of the resistance of the closed elytra; but if these be held open with one hand, and the abdomen recurved with the other, it is readily shown. As the open space, then, can be exposed only when the elytra are expanded, the reason is manifest why the red light is never displayed by the insect when walking or resting; the green thoracic light, on the other hand, *may* be displayed at any time; it is however very rarely shown during flight. On one occasion two or three glow-flies, having entered the sitting-room in the evening, gave out the red light most brilliantly as they flew round near the ceiling, the spectators being beneath them; one of these, being alarmed by my efforts to capture it, gave out the thoracic light also very brightly; and the mingling of the green and red light in the evolutions of flight produced an effect indescribably beautiful.

"That the thoracic light is subject to the will of the insect is indubitable; but whether the same can be predicated of the abdominal light I am not assured. During flight it is every second intermitted, as far as the observer can detect; but its appearance or disappearance may depend upon whether the dorsal or ventral surface is presented to the eye. This is when, soon after dark, the insect is sweeping in rapid, headlong, irregular curves over the fields or along the edges of the forest, when the appearance resembles that of a stick with the end on fire (but not in flame) carried or whirled along by one running swiftly, quenched suddenly after a course of a dozen yards, to appear again at a similar distance. When slowly flying over the grass, the progress of one may often be traced by the red glare on the ground beneath; a space of about a yard square being brightly illuminated, when no light at all reaches the spectator's eye from the body of the insect."—p. 106.

The Venus Lizard.—"One day in February, having ascended the ridge with a companion, my attention was arrested by a lizard about a foot long, and of a lively green colour, on the trunk of a small tree, head downward, intently watching our motions as we stood near. My young friend suggested the possibility of capturing it by slipping a noose over its head, while its attention was engaged by whistling. I laughingly proceeded to try the spell, and having made a noose of small twine, which I tied to the end of a switch, I gently walked towards him, whistling a lively tune. To my astonishment, he allowed me to slip the noose over his head, merely glancing his bright eye at the string as it passed. I jerked the switch, the music ceased, and the green-coated forester was sprawling in the air, dangling, greatly to his annoyance, at the end of my string. He was very savage, biting at everything near; presently his colour began to change from green to blackish, till it was of an uniform bluish black, with darker bands on the body, and a brownish black on the tail; the only trace of green was just around the eyes. I carefully secured without injuring him, and brought him home in the collecting-basket, into which I had no sooner put him, than he fiercely seized a piece of linen in his teeth, and would not let it go for several hours. I transferred him to a wired cage, linen and all, and at length he suddenly let go his hold, and flew wildly about the cage, biting at anything presented to him. At night I observed him vividly green, as at first; a token, as I presumed, that he had in some measure recovered his equanimity. The next day he continued very fierce. I hung the cage out in the sun; two or three times in the course of the day I observed him green, but for the most part he was black. The changes were rather quickly accomplished.

"After he had been in my possession about four days, I observed him one morning sloughing his skin; the delicate epidermis, loosened from the body and legs, looked like a garment of thin white muslin, split irregularly down the legs and toes, and separated from that of the tail, on which the integument yet adhered unbroken. Throughout the day the loosened skin hung about the animal, though more and more loosely. He had not abated a whit of his fierceness; leaping at a stick pointed at him, and seizing it forcibly with his teeth.

"Another individual, caught in the same locality, and by the same device, I introduced into the cage of the former, who did not offer any molestation to the intruder. After they had remained in my possession, the one about six weeks, the other about four, they both died, almost on the same day, and both in the process of sloughing. In this operation the skin appears to be first separated from the head; for in one of these it was perfectly loose from the whole head, and was removable in one piece, but to the neck and entire body it still adhered by organic union. I suspect that the sloughing of the skin is, at least sometimes, the result of universal excitement. All that I had taken alive, and caged (amounting to many individuals), after the most violent behaviour at first, soon sloughed; usually the very next day. The food of this lizard appears to include both vegetable and animal substances. I was never able to induce one to eat in captivity; but the dissection of several has given me this result. Thus in one I found hard seeds and farinaceous substance; in another the fragments of a brilliant Curculionideous beetle, and other insects. I once observed a large one on the summit of the mountain, deliberately eating the ripe glass-eye berries, munching half of one away at a mouthful. It would require no great warmth of imagination to identify these sunny, spicy, pomiferous groves with the golden-fruited gardens of the Hesperides, and this fierce, sinister, saw-crested lizard, with the watchful dragon that guarded them. If I had the naming of him, I would call him Ladon."—p. 148.

(To be continued).

'*The Annals and Magazine of Natural History*,' *No.* 63, *dated March*, 1853.

THE communications to this number are intituled: —

'Descriptions of some of the larger forms of Fossilized Foraminifera in Scinde; with Observations on their Structure.' By H. J. Carter, Esq., Assistant Surgeon, Bombay Establishment.

'Further Notes on British Zoophytes, with Descriptions of New Species.' By the Rev. Thomas Hincks, B.A.

'Observations on the genus Schwenkia.' By John Miers, Esq., F.R.S., F.L.S.

'Observations on Relative Position; including a new Arrangement of Phanerogamous Plants: — Part II. On the Position of Carpels.' By B. Clarke, F.L.S., &c.

'Note on the Gryphæa of the bed called Gryphite Grit in the Cotteswolds.' By John Lycett, Esq.

'On two new Subgenera of Calanidæ.' By John Lubbock, Esq., F.Z.S.

'On the Germination of the Resting Spores, and on a form of Moving Spores in Spirogyra.' By Dr. W. Pringsheim. [Translated from the 'Flora' of August 14 and 21, 1852, by Arthur Henfrey.]

'Revision of the Families of Nudibranch Mollusks, with the Description of a new Genus of Phyllidiadæ.' By J. E. Gray, Ph.D., F.R.S., V.P.Z.S., &c.

'Additional Notice of the Genus Tancredia, *Lycett*, Hettangia; *Turquem*.' By John Lycett, Esq.

'Rambles in Ceylon.' By Edgar Leopold Layard, Esq.

Bibliographical Notice:—Macgillivray's 'History of British Birds.'

Proceedings of Learned Societies: — Professor Owen on the Anatomy of the Wart Hog. Mr. E. Newman on some Species of Distichocera.

Miscellaneous: — Notice of a Binocular Microscope; by J. L. Riddell. On the Genus Bifrontia; by J. E. Gray, Ph.D. On a New Method of Illuminating Opaque Objects for the high powers of the Microscope; and on a new Achromatic Condenser; by J. L. Riddell. On the Structure of the Cells of Plants. Meteorological Table.

This number contains 102 pages and 7 plates, and is charged double the usual price.

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'*Insecta Saundersiana: or Characters of undescribed Insects in the Collection of William Wilson Saunders, Esq. Diptera, Part IV.* By FRANCIS WALKER, Esq., F.L.S. London: Van Voorst. March, 1853.

THE title of this work sufficiently defines its object. The present part contains 162 pages of letter-press, in 8vo., and 2 plates. The insects described are 5 new species of Conops, 1 of Gymnosoma, 1 of Trichopoda, 1 of Phasia, 1 of Hyalomya, 1 of Phania, 2 of Ocyptera, 74 of Tachina, 1 of Gonia, 21 of Dexia, 23 of Sarcophaga, 38 of Musca, 1 of Idia, 32 of Anthomyia, 6 of Cœnosia, 1 of Dryomyza, 4 of Sapromyza, 4 of Ortalis, 2 of Ropalomera, 2 of Sepsis, 2 of Lauxania, 2 of Lonchæa, 20 of Trypeta (Tephritis, *Auct.*), 15 of Calobata, 1 of Ulidia, 8 of Sciomyza, 2 of Tetanocera, 1 of Thecomyia, 2 of Heteromyza, 5 of Helomyza, 5 of Notiphila, 2 of Ephydra, 9 of Drosophila, 1 of Opomyza, 2 of Gymnopa, and 1 of Chlorops. The new species figured are 3 of Tachina, 1 of Phania, 1 of Ocyptera, 2 of Calobata, 1 of Ropalomera, and 8 of Trypeta.

'*List of the Specimens of British Animals in the Collection of the British Museum. Part XII. Lepidoptera (continued).*' Printed by order of the Trustees. 1853.

THIS portion of the Lepidoptera, like the two which have preceded it, is from the pen of the late lamented James Francis Stephens. It comprises only the Crambidæ, and contains 54 pages 12mo. It is merely a synonymic list, without descriptions.

'*List of the Specimens of Neuropterous Insects in the Collection of the British Museum. Part II. (Sialidæ—Nemopterides).* Printed by order of the Trustees. 1853.

THIS portion of the general collection of Neuroptera, like that which has preceded it, is from the pen of Mr. Walker. It contains descriptions of all the species comprised in the Museum collection, *viz.*: — 3 of Sialis, 1 of Ithone, 1 of Merope, 1 of Dilar, 8 of Chauliodes, 17 of Hermes, 2 of Corydalis, 13 of Raphidia, 48 of Mantispa, 2 of Hoplophora, 3 of Nymphes, 1 of Polystœchotes, 8 of Osmylus, 93 of Chrysopa, 66 of Hemerobius, 1 of Dromophila, 4 of Coniortes, 217 of

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Myrmeleon, 81 of Ascalaphus, 1 of Stilbopteryx, 1 of Chorista, 3 of Boreus, 20 of Panorpa, 1 of Euphania, 18 of Bittacus, and 19 of Nemoptera.

'*Shells and their Inhabitants. The Genera of Recent Mollusca arranged according to their Organization.*' By HENRY and ARTHUR ADAMS. Part II. London: Van Voorst. February, 1853.

THE 1st part comprised the following genera of Cephalopoda:—Octopus, Cistopus, Pinnoctopus, Eledone, Cirrhoteuthis, Philonexis, Tremoctopus, Argonauta, Cranchia, Loligopsis, Chiroteuthis, Histioteuthis, Enoploteuthis, Ancistrocheirus, Abralia, Octopodoteuthis, and Onychoteuthis. All these genera are beautifully figured by Mr. J. de C. Sowerby.

The 2nd part comprises the following genera of Cephalopoda:—Ancistroteuthis, Onychia, Ommastrephes, Gonatus, Loligo, Teuthis, Sepioteuthis, Rossia, Sepiola, Fidenas, Sepia, Spirula, and Nautilus; and the following genera of Pteropoda:—Cavolina, Diacria, Clio, Balantium, Styliola, Triptera, Cymbulia, Euribia, Psyche, Tiedmannia, Limacina, Spirialis, Heterofusus, Cheletropis, Clione, Cliodita, Pneumodermon, Spongiobranchia, Trichocyclus and Pelagia. All these are figured.

Proceedings of the Zoological Society.

Tuesday, February 8, 1853.—JOHN GOULD, Esq., F.R.S., in the chair.

Dr. Baird communicated a paper on new species of Entozoa, contained in the national collection at the British Museum, which he described under the following names:—Ascaris similis, A. lævissima, A. bifaria, Gordius platyurus, G. Tolosanus, G. verrucosus, G. violaceus, G. pustulosus, Mermis rigidus, M. spiralis, Pentastoma megacephalum, Tetrarhynchus rugosus, Tænia Bremseri, T. Calva, T. Zederi, T. Goezii, Bothriocephalus antarcticus.

Dr. Gray communicated a description of the animal of Cyclina sinensis, which he stated was drawn up ten or twelve years ago, from a specimen presented to him by Mr. John Reeves, to whom we are indebted for the knowledge of the greater part of the animals of China with which zoologists are as yet acquainted. The animal in most particulars agrees with that of the genus Dosinia, next to which Dr. Gray lately proposed to place it in his arrangement of the genera of Veneridæ.

Mr. Adam White contributed a monograph of the genus Œgosoma of Serville, with the description of Cyrtonops, a new genus allied to it, for the type of which he proposed the name of Cyrtonops punctipennis. It was obtained in India. The additions to the genus Œgosoma are remarkable, and five in number, *viz.*, Œgosoma sinicum, collected by Mr. Fortune at Shanghai; Œ. ornaticolle, from India; Œ. cingalense, from Ceylon; Œ. sulcipenne, collected by Mr. Packman in Tenasserim; and Œ. tibiale, from Northern India.

The Secretary read to the meeting some extracts from notes on the Zoology of the Malay Peninsula, with which he had been supplied by Mr. George Windsor Earl, whose long residence in the Indian Archipelago had given him abundant opportunities for observation. Amongst the most remarkable animals alluded to, were two species of wild cattle, of immense size, to which the natives give the names of *Sapi* and *Saladang*.

The Secretary exhibited, on the part of Mr. Richard Hill, Corresponding Member, a beautiful series of birds' eggs, collected by that gentleman in Jamaica, and therefore authentically named. It is greatly to be regretted that a considerable number were broken in their transit to this country, or during their detention at Southampton. The extreme beauty of these eggs, and the certainty with which they have been determined, give an unusual value to this donation, although Mr. Hill has ever been regarded as one of the most active and intelligent contributors to the objects of the Society, in connexion with the Zoology of the great island in which he has so long resided.

Tuesday, *February* 22, 1853.—Dr. GRAY, Vice-President, in the chair.

Mr. Henry F. Walter exhibited a fine series of the eggs of vultures from his own extensive cabinet, for the purpose of comparison. The immediate object he had in view was to introduce to the notice of the meeting an egg of Otogyps auricularis, which he believes to be the only specimen as yet existing in this country, and in fact he is only acquainted with two others in the collections of the continent. The Society are so fortunate as to possess living examples of every genus of vultures, with the single exception of Neophron, the Egyptian vulture, which will be added to the menagerie, without difficulty, during the ensuing summer. Mr. Walter also exhibited the eggs of several other rare species of birds, which are at present living in the Society's menagerie, including the great snow-partridge of Persia, the *Kep-ke-dereh*, presented to the Society by Mr. Stevens, Her Majesty's Vice Consul at Tabreez. A beautiful drawing of this fine bird, by Mr. Wolf, was on the table. The most remarkable egg was that of the Tui bird (*Prosthemadera Novæ Zealandiæ*), which was described for the first time, and is unique in Mr. Walter's collection. The Tui bird now in the Society's possession, has lived in the menagerie upwards of four years.

Mr. Gould exhibited a nearly complete collection of the family of Rhamphastidæ, or toucans, including fifteen species not yet figured in his Monograph. After pointing out the characters which distinguish the generic groups into which he separates them, Mr. Gould took occasion to describe a very singular addition to those previously known, conspicuously marked by a patch of bright blue on the throat; it belongs to the genus Aulacorhamphus, and received the name of A. cæruleogularis. It was collected in Veragua by Mr. Seemann, during the voyage of H. M. Surveying Ship, Herald. The Society's menagerie contains three fine species of toucans, Rhamphastos toco, R. erythrorhynchus, and R. Ariel. These very interesting birds are in perfect health, and even during the present severe weather take exercise every day in the open air in the great aviary.—*D. W. M.*

Proceedings of the Entomological Society.

March 7, 1853.—EDWARD NEWMAN, Esq., President, in the chair.

The following donations were announced, and thanks ordered to be given to the donors: — The 'Zoologist' for March; by the Editor. The 'Athenæum' for February; by the Editor. The 'Literary Gazette' for February; by the Editor. The 'Journal of the Society of Arts;' by the Society. 'Insecta Saundersiana.—Diptera, Part IV.;' by W. W. Saunders, Esq. 'Entomologische Zeitung' for November, 1852, and January, 1853; by the Entomological Society of Stettin. 'Annales de la Société Entomologique de France,' 1851; by the Society. 'Proceedings of the Royal Society,' Vol. vi., No. 94; by the Society. Boxes of English Lepidoptera from the following gentlemen:—Mr. F. Bond, Major Sheppard, Mr. A. F. Sheppard, Mr. Edwin Shepherd, and Mr. T. Boyd. A box of English Micro-Lepidoptera; by Mr. Douglas. Two boxes of European Lepidoptera; by M. Becker, of Paris. One hundred lists of British Lepidoptera; by Mr. J. W. Dunning.

These lists were presented for the special purpose of benefiting the Society's collection of British Lepidoptera, by having the desiderata marked thereon, and then circulated among those members who had duplicate specimens to give away. Messrs. A. F. Sheppard and Edwin Shepherd had so marked several of the lists, and the above donations of English Lepidoptera were the first result.

J. N. Winter, Esq., Brighton, and M. H. F. de Saussure, Geneva, were balloted for and elected Members of the Society.

The President announced that the Society offered a prize of £5 5*s.* for the best essay on the Natural History of the species of Coccus injurious to fruit-trees in this country (with an especial reference to the "mussel-scale" of the apple, of which a full and particular account is to be given), and the best means of preventing their ravages.

The essays, each distinguished by a motto, and with the author's name in a distinct sealed envelope, to be addressed "To the President and Council of the Entomological Society," and delivered on or before the 31st of December next.

Mr. Spence exhibited specimens of a Thrips, received through Dr. Lankester from Dr. Theophilus Thompson, to whom they had been sent from Australia, where they prevented rose-trees from blossoming by eating the petals of the flowers.

Mr. S. Stevens exhibited a specimen of each of the rare Coleoptera, Agasma semicrudum and Calodera Kirbii, lately received from Australia.

Mr. T. Spencer exhibited a specimen of Chœrocampa Celerio, captured last October in the Regent's Park, and a scorpion, found last summer in the middle of a field at Edgeware.

Mr. Douglas, on the part of Mr. A. R. Hogan, exhibited the specimen of Hipparchia Janira, with six whitish appendages to the haustellum, respecting which he had sent an inquiry to the 'Zoologist' (p. 3775), and which Mr. Douglas had answered in the same journal (p. 3809), considering the presence of these bodies to be attributable to the adhesion of parts of flowers. Subsequent examination of the butterfly, kindly sent by Mr. Hogan, had confirmed this impression.

The President said he was convinced that Mr. Douglas was correct in his opinion, for not only did he find the appendages in question to be the pollen-masses of an Orchidaceous plant, but he identified the very species as Orchis bifolia. The pollen-granules were still distinctly observable at the distal extremity of the appendages, while the basal end, always extremely viscid, had fixed itself firmly to the maxillæ of the insect. These extraneous bodies are affixed to the maxillæ in very regular order, but he regarded their position as purely accidental; and the hairs observed by Mr. Hogan adhering to the pollen-masses were no part of the plant, but doubtless derived from the palpi or pectus of the butterfly. The occurrence of pollen-masses on various parts of insects had been repeatedly noticed by botanists as well as entomologists; they are very common on the heads of wild bees, especially in foreign countries, in such cases being not only derived from Orchids, but also from Asclepiads,—a natural order of plants which does not occur wild in this country, and which, although widely differing from the Orchids in other structural peculiarities, possesses similarly constructed pollen-masses. To such an extent has this phenomenon prevailed in some instances, that botanists have conjectured that Nature availed herself of the services of the bees to carry out the fecundating process, for many Orchids, without their assistance in conveying the pollen-granules from one flower to another, failed to mature their seeds. The pollen-masses are very carefully and accurately described by the late Sir J. E. Smith, Dr. Lindley, and other botanists.

The Secretary read the following notes, communicated by Professor Zeller, Honorary Member of the Society.

"*Impaled Insects.*—I only remember two examples of impaled insects, but both of them afford good evidence of the cause of their position. In one of these cases the insect was a suicide: a male of Triphæna comes, *Tr.*, in the finest condition, had a point of the rush, Juncus acutus, in its breast, and was dead when I found it. I still keep the thorax in my collection; it is quite uninjured, which would not be the case if a bird had captured and impaled the moth. Besides, the locality, in the environs of Catania, is such as no Lanius would inhabit, being a small meadow, wet in winter, surrounded by a large lava-desert, without tree or shrub. Juncus acutus is the haunt of an Œdipoda which I think new, (*Œd. Junci*, mihi, in litt.); and I sometimes observed this insect, after a short flight, fall down and impale its wings on the pin-like points of the rush, and get them loose only after many efforts. That insects would be easily impaled here I was sure from my own experience, as when stooping quickly for any capture, I often found myself on these unhappy points almost in a Turkish fashion. The moth here spoken of is mentioned in the 'Isis,' 1847, p. 442.

"The other instance is of an earlier date, and happened to a Triphæna fimbria, *Tr.*, ♂. This insect was impaled on a sloe-thorn, and was still living when I found it. It had its *back downwards*, the wings on its right side *half bitten off*, and its thorax *much injured*. In the alder-brake where this happened, there were some Lanii (shrikes), the species of which I do not now remember."

"*Larva of Polyommatus Artaxerxes.*—From the affinity of this species with Polyommatus Agestis, I infer the possibility of its larva feeding on a species of Geranium or Erodium; for on Erodium cicutarium I have detected the larva of Agestis. If it be deemed probable that any species of these plants affords food to the larva of Artaxerxes, a quantity of them should be gathered at the proper season in the locality inhabited by the butterfly, by cautiously cutting them off above the roots, and they should then be torn and shaken over white paper or a table-cloth. But an undoubtedly better method of obtaining the larvæ is the following. Most butterflies are very easily observed laying their eggs, and the Polyommati are particularly favourable for such investigations. Therefore, when the females of Artaxerxes have been out some time, and begin to be wasted, patiently follow one on a fine morning without troubling it, and observe on what plant it settles; after some preliminary attempts it will probably be seen to bend its body under a leaf, which proceeding is a certain sign of its laying an egg; this may soon be recognized by its white colour. The female will continue to lay eggs for a long time without resting to feed, and thus in a short period a number of eggs may be collected. To prevent their drying up, they must be fixed upon leaves of a living plant set in a flower-pot, and thus every opportunity may be had for leisurely observing the larva during its changes. In this way I procured the eggs of and reared to perfection Argynnis Dia, Colias Hyale, Polyommatus Corydon, Alexis, Amyntas, Hylas, Arion (both the latter on Thymus Serpyllum), Argiolus, Acis (on the capitula of Armeria vulgaris), Phlæas, Circe, Hippothoë, Chryseis, &c., Leucophasia Sinapis (on Trifolium arvense and Coronilla varia), Papilio Machaon, Podalirius, Hesperia Actæon (on Stipa capillata), alveolus (on Potentilla alba, but I often find the larva on Potentilla anserina among alder-bushes), Emmelesia albulata (on Alectorolophus minor), and many others."

Mr. F. Smith read a monograph of the Hymenopterous genus Cryptocerus, including descriptions of 14 new species, and illustrated by outline figures of all the species known. Three new genera are established,—Meranoplus for two species having the body pedunculated and rounded in the female, Cataulacus for four species of the Old World structurally different from Cryptocerus, and Onychognathus for a single species from New Zealand remarkable for having only five joints in the antennæ.

Mr. Spence presented for the signatures of the members, a petition to the Government, originated by the Royal Society, praying that it and the other Societies for the study and advancement of natural knowledge, should be provided by the State with apartments in juxta-position; showing the disadvantages under which such Societies, and, through them, science, at present laboured, on account of their disconnected locations, and having severally to support heavy expenses for house-rent and other necessary charges.

Part 4, Vol. II., n. s., of the Society's 'Transactions,' was announced as ready.—*J. W. D.*

Occurrence of Onychoteuthis Banksii at Banff, N. B.—I beg leave to place on record, through the pages of your journal, the capture of Onychoteuthis Banksii, *Leach*, at Banff, N. B. It is a decapodous cephalopod, which usually inhabits the Atlantic and Indian Oceans. I am not aware of the previous occurrence of this mollusk in Britain; and my friend Arthur Adams, Esq., F.L.S., whom I have consulted on the subject, thinks it new to the British Fauna. —*John Rose, M.D., R.N.; Haslar Hospital, Gosport, March* 14, 1852.

Mr. Stephens's Entomological Library and Collection. — Entomologists will be pleased to learn that Mr. Stephens's rich collection of British insects has been purchased by the Trustees of the British Museum. His valuable entomological library is likely to pass into the hands of Mr. Stainton.—*E. N.*

5 AP 53

BIRDS' EGGS.

The rare and valuable Collection formed by THOMAS H. POTTS, Esq., of Kingswood Lodge, Croydon.

MR. J. C. STEVENS is instructed to offer for unreserved SALE BY AUCTION, at his Great Room, 38, King Street, Covent Garden, early in Iay, the above very important Collection of BIRDS' EGGS, which includes speci- nens of the GREAT AUK, Little Auk, Caspian and Noddy Tern, Woodcocks, Pra- incoles, Dunlins, Cranes, Great and Little Bustard, Golden and Sea Eagles, Ospreys, Kites, Buzzards, Peregrines, Jer Falcons, Eagle Owls, &c. &c.

Catalogues are in preparation.

TO ENTOMOLOGISTS.

MR. FOXCROFT begs to return his sincere thanks to the Trustees of the British Museum, the Nobility, Gentry, and Clergymen, and the Mem- bers of the Entomological Society, No. 12, Bedford Row, for the patronage he has eceived for a number of years, and takes the liberty of informing them, that he in- ends collecting INSECTS during the whole Summer of the present year (1853), in he best localities known in Scotland, commencing on the 1st of May, on Arthur's Seat, continuing along the hills to Glasgow, from Glasgow along the Clyde to Loch- omond through Lass Glen to the head of Lochlomond, over Ben Lomond, passing he side of Ben More, continuing along Glengalloch and Glendochart, by Zick and Killin along the Lochtay, turn to the left over the hills to the Bridge of Balgy, turn o the left bearing north over the hills to Glenlyon, then across the hills to Kinloch, Rannoch, through the Black Fir Woods, up the hills, and continue along the whole ange of Grampian Hills, taking Brodrick on Arran over the hill called Goat Fell, nd all the highest hills in Scotland.

Mr. F., to enable him to carry out this plan, wishes to raise a sufficient sum by Subscriptions of one Guinea, each Subscriber to be entitled to one Specimen of every species collected during the Season, which will be equally shared in November on his eturn, and sent to each Subscriber's residence. The boxes in which the Insects will be sent are to be returned or paid for.

Mr. F. hopes, by pursuing this plan of visiting Scotland, to take choice Insects, or new species, and to afford an excellent opportunity to Gentlemen of obtaining what may be wanting for their Cabinets, also for Proprietors of Museums and Collectors of British Insects.

Persons wishing to become Subscribers are requested to send their Subscriptions, by Post Office Order or otherwise, by the second week in April, to Mr. JAMES FOX- CROFT, No. 3, Union Yard, 191, Oxford Street, London. Post Office Orders to be made payable at 210, Oxford Street.

A variety of British Insects always on Sale.—Gathering Boxes, Cabinets for Insects, Shells, Fossils, &c.—Nets and Breeding Cages of all kinds made to Order.

N.B.—Any Gentleman or his Collector having a wish to pass a few of the Summer months collecting, Mr. F. would have no objection to his accompanying him the whole or part of the Season.

TO INSECT-COLLECTORS, DEALERS, &c.

FOR SALE, SOME BEAUTIFUL BRED SPECIMENS of the Oleander Hawk, Death's-head, Spotted Elephant, Purple Emperor, Clifden Nonpareil, Kentish Glory, Scarce Swallow-tail, Apollo, Broad and Narrow Bordered Clear-wings, Chariclea Delphinii, Stauropus Fagi, &c., at reduced prices. A conside- able allowance made by taking a quantity. Chrysalides of rare Insects occasionally on hand.

A good stock of scarce British Birds always on hand.

The Trade supplied with every article at the lowest possible remunerative prices, by JAMES GARDNER, Preserver of Birds, Animals, Fish, &c., 29, Great Marlbo- rough Street, Regent Street.

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Apothecaries' Hall, March 26, 1853.

My dear Sir,

In recapitulating my experiments of 1849 and 1850,* in January, 1852,† I stated that I was carrying out a similar investigation, in the small aquarium, with a confined portion of sea-water, employing some of the *green* sea-weeds as the vegetable members of the series, and the common winkle or whelk to represent the snail as a scavenger; and in September, 1852,‡ I mentioned that I had succeeded perfectly in my endeavours, having had the sea-water quite clear and sweet for upwards of six months, and had for some time maintained the healthy life of several sea anemonies, &c. Since this period I have received from Mr. Gosse, and several friends, numerous additional subjects to experiment with, which have passed through the trying period of winter with complete success.

Now as I have heard that other investigators are experimenting with sea-water in these miniature ponds, I am anxious to take the earliest opportunity of communicating for their benefit the kind of sea-weeds which I have found most beneficial for the purpose of maintaining the water in this healthy state, so that they may avoid the difficulties I had myself to encounter in first commencing the experiments. The plants which appear to answer best are Ulva latissima and other sea varieties of Ulva, the Enteromorphæ, and Zostera marina, particularly the latter. The observations which I have been able to make on the numerous inhabitants of my aquarium, I hope to find time to state in detail before long.

I remain, Yours very truly,

ROBERT WARINGTON.

E. Newman, Esq.

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* 'Quarterly Journal of the Chemical Society,' iii. 52. 'Zoologist,' p. 2868.

† 'Gardener's Magazine of Botany and Garden Companion,' for January, 1852.

‡ 'Annals and Magazine of Natural History,' x. 280. 'Zoologist,' p. 3633.

EDWARD NEWMAN, PRINTER, 9, DEVONSHIRE STREET, BISHOPSGATE.